

REMARKS

Applicant respectfully requests the Examiner's reconsideration of the present application, as amended. Applicant respectfully submit that this Amendment is responsive to the Final Rejection mailed January 12, 2004.

Summary of Office Action

Claims 1-20 are pending.

Claims 1-3, 5-7, 9-10, 12, 15-16, and 18 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,274,702 of Rosch, et al. ("Rosch") in view of Millman, et al., *Integrated Electronics: Analog and Digital Circuits and Systems*, "The CB Configuration", 1972, p. 254 ("Millman").

Claims 4, 8, 11, and 17 were rejected under 35 U.S.C. § 103 as being unpatentable over Rosch in view of Millman and further in view of Spanos, "University of California at Berkeley EE 105: Microelectronic Devices and Circuits" (Fall 1999).

Claims 13, 14, 19, and 20 were indicated as being allowable if re-written.

Summary of Amendments

Claims 1, 5, 9, and 15 were amended. Applicant respectfully submits support for the amendment is found at page 14 of the specification and Figures 4, 5A, 5B. Applicant submits the amendments to the claims do not add new matter.

Response to 35 U.S.C. § 103 Rejections

Claims 1-20 were rejected under 35 U.S.C. § 103 as being unpatentable over various combinations of Rosch, Millman, and Spanos. Applicant respectfully submits the claims as amended are patentable under 35 U.S.C. § 103 in view of the cited references.

Applicant and the Examiner conducted a number of telephone conferences culminating in a conference on September 17, 2004 during which applicant believes applicant and the Examiner agreed on at least some points.

The Examiner's position with respect to Rosch is that Rosch's d.c. amplifiers 132, 134 could have a common base stage and the Examiner provided various references and motivations for rejecting applicant's claims under 35 U.S.C. § 103. With respect to claims 1, 5, 9, and 15, applicant still maintains *the cited references do not teach or suggest coupling an outgoing audio signal to a subscriber line through either 1) a plurality of transistors coupled in a common base configuration or 2) a common base isolation stage*. Applicant also disagrees with the Examiner regarding the characterization of the signals input to Rosch's d.c. amplifiers 132, 134 as "control signals" in view of the purpose of control signals provided to 142, 144, 148, and 150.

Rather than continuing to belabor these points in the present application, applicant has amended the claims to provide an independent basis for allowance even assuming *arguendo* that the Examiner's position is correct.

Rosch was cited for disclosing a telephone line interface circuit that receives an outgoing audio signal from the central office on a receive line which is coupled to the subscriber line through amplifier circuits. Rosch includes a

disclosure of a subscriber line interface circuit having a sense network (Rosch, Fig. 2) and a line drive circuit (Rosch, Fig. 3). The line drive circuit is coupled to the tip and ring wires of the telephone line via the sensing network. The sensing network senses the tip and ring lines to determine the subscriber line differential current (ID), loop current (IL), common mode voltage (VCM), and common mode current (ICM). A digital control circuit within the linefeed driver monitors the sensed IL, ICM, and VCM and adapts the line interface circuitry. (Rosch, col. 11, lines 7-16).

Millman was cited as teaching the use of common base transistor configurations to match a low impedance source to a high impedance load.

Spanos was cited as teaching the similarity between common base amplifiers and common gate amplifiers.

The Examiner previously combined Millman and Rosch to arrive at the conclusion "it would have been obvious...to use a plurality of transistors, coupled in the common-base configuration, for the line driving amplifiers to match a low impedance source with an audio signal superimposed on top to a high impedance load as taught by Millman". (01/12/2004 Office Action, p. 3)

As stated above, claims 1, 5, 9, and 15 have been amended. *Applicant respectfully submits that the cited references, alone or combined, do not teach or suggest a method including the step of coupling an audio signal to a subscriber line through a common base isolation stage, wherein the common base isolation stage provides d.c. isolation from the subscriber line for a source of the audio signal.*

If, as the Examiner has suggested, Rosch's amplifiers 132, 134 included a common base stage, such a stage could not be used to provide any form of d.c. isolation from the subscriber line without rendering Rosch's circuitry inoperable.

The amplifiers 132, 134 of Rosch's line drive circuit are used to drive the subscriber line. Amplifiers 132, 134 are unity gain, d.c., amplifiers. (Rosch, col. 10, lines 18-29) Thus any d.c. being driven on the subscriber line *must appear* at the non-inverting inputs of amplifiers 132, 134 (Rosch, col. 11, lines 33-39).

Clearly, there is no d.c. isolation provided by amplifiers 132, 134 even if amplifiers 132, 134 contained a common base stage as proposed by the Examiner.

Rosch's audio signal (RX) is a.c. coupled to the non-inverting input of amplifier 132. Although the sources of the audio signal (e.g., 104, 106, see Rosch, col. 10, lines 4-9; Fig. 3) are d.c. isolated from the subscriber line, such isolation is provided by capacitors 136, 138 rather than any stage of amplifiers 132 or 134.

Applicant thus respectfully submits none of the references, alone or combined, teaches or suggests coupling an audio signal to a subscriber line through a plurality of transistors coupled in a common base configuration, wherein the common base configuration provides d.c. isolation from the subscriber line for a source of the audio signal.

In contrast, claim 1 includes the language:

1. A method comprising the steps of:
 - a) receiving an outgoing audio signal; and
 - b) *coupling the audio signal to a subscriber line through a plurality of transistors coupled in a common base configuration, wherein the common base configuration provides d.c. isolation from the subscriber line for a source of the audio signal.*

(Claim 1)(*emphasis added*)

For the same reasons stated above, applicant submits that *none of the references, alone or combined, teaches or suggests coupling an audio signal to a subscriber line through a common base isolation stage, wherein the common base isolation stage provides d.c. isolation from the subscriber line for a source of the audio signal.*

Claims 5, 9, and 15, similarly include the language:

5. A method comprising the steps of:

- a) receiving linefeed driver control signals and outgoing audio signals on a same plurality of signal lines; and
- b) *providing the outgoing audio signals to a subscriber line through a common base isolation stage, wherein the common base isolation stage provides d.c. isolation for a source of the audio signals.*

(Claim 5)(*emphasis added*)

9. A subscriber line interface circuit apparatus, comprising:

a first circuit for coupling a received outgoing audio signal to a subscriber line, wherein the first circuit couples the received outgoing audio signal to the subscriber line through a common base isolation stage, wherein the common base isolation stage provides d.c. isolation from the subscriber line for a source of the audio signal.

(Claim 9)(*emphasis added*)

15. A subscriber line interface circuit apparatus, comprising:

*a signal processor providing an outgoing audio signal; and
a linefeed driver coupled to receive the outgoing audio signal,
wherein the linefeed driver couples the received outgoing audio signal to a subscriber line through a common base isolation stage, wherein the common base isolation stage provides d.c. isolation from the subscriber line for the signal processor.*

(Claim 15)(*emphasis added*)

Applicant thus respectfully submits claims 1, 5, 9, and 15 are patentable over the cited references under 35 U.S.C. § 103. Given that claims 2-4 depend from claim 1, claims 6-8 depend from claim 5, claims 10-14 depend from claim 9, and claims 16-20 depend from claim 15, applicant submits dependent claims 2-4,

6-8, 10-14, and 16-20 are likewise patentable over the cited references under 35 U.S.C. § 103.

Applicant respectfully submits the rejections under 35 U.S.C. § 103 have been overcome.

Conclusion

In view of the arguments presented above, applicant respectfully submits the applicable rejections and objections have been overcome. Therefore all of claims 1-20 as amended should be found to be in condition for allowance.

If there are any issues that can be resolved by telephone conference, the Examiner is respectfully requested to contact the undersigned at **(512) 306-9470** or **(512) 858-9910**.

Respectfully submitted,

Date September 17, 2004 William D. Davis
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